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NEW PHOTOGRAPHIC, MOTION PICTURE, AND OPTICAL EQUIPMENT EXHIBITED AT THE LEIPZIG FAIR

A large number of items from the Union of People-Owned Optical Plants (VEB Optik) were exhibited at the Leipzig Fair. The exhibit featured the products of the Zeiss Works at Jena.

Among the exhibits were a planetarium, an improved model of the pre-war apparatus, with considerable changes incorporated in the mechanical drive, the gearing, and the motors; a microfilm camera and reader using ordinary 35-mm film with standard 16 x 22-mm frames, marketed under the name Dokumator; and a large epidiascope for projecting 8.5 x 10 and 5 x 5 pictures with a projection size of approximately 230 cm at 5 m.

The large research microscope Lumipan is again being produced. It has been modified by enlarging the light housing to prevent expansion due to heating which might affect the fine adjustment.

The L-mounts for microscopes which came out last year have been developed further. One development, based on this mount, is a portable microscope which can be packed in a carrying case. Another is an L-mount for research purposes. The large Abbe lighting apparatus can be used with it, which is a great advantage in microphotography. It has a removable condenser drive and an adjustable table. The set can also be used with a direct lighting device, and with the Mikrotar which will be produced again this year. The set is thus a universal microscope for all kinds of research and microphotography.

All these mounts can be equipped with the Zeiss phase attachment. In this line, Zeiss will produce a number of new products both for direct and indirect lighting.

The new Zeiss luminescence microscope contains a 10-amp carbon arc lamp with automatic advance of carbon rods, lighting system with collector cooler, filter holders, and the microscope mount. Since it is to serve only for the observation of luminescence, the eyepiece is equipped with a blocking filter, which blocks all short-wave rays. The set can be used for photography with miniature cameras for which special microphotography adapters have been made available.

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The large Neophot metal microscope has been brought back on the market but with some modifications. It has a shock-proof four-point mounting allowing time exposures to be taken of oil immersions even in badly vibrating buildings. A 90 x 120-mm camera with a long bellows is used. The observer at the microscope can check the sharpness of the image on the focusing screen by means of a mirror, while the microscope adjustments can be made from the rear of the camera by means of rods. An arc lamp is used for lighting. The microscope is equipped with a polarization device. Both plane and prismatic illuminators may be used and oblique lighting is possible.

The new micorphotography lenses are a radical innovation. The field distortion, inherent in even the best lenses previously produced, has now been eliminated by the use of plane apochromatic lenses.

Two new devices have been brought out in the field of binocular magnifiers. The new dissecting microscope PM XVI is conventional in design. It permits magnifications from 2.5 to 63 times. It can be used to make stereoscopic pictures. Lighting is supplied by a 15-w projector lamp attached to the microscope by a movable arm. The second new device in this field is the Citoplast dissecting microscope. It does not have the conventional double lens system, but uses the same frontal lens for both eyepieces, maintaining the same distance of 100 mm from the object for all magnifications from 4 to 100. Magnifications 0.63, 1, 1.6, 2.5, and 4 are set by means of a dial located next to the fine adjustment screw.

The Slide Manipulator, a device for dissecting microscopic samples under the microscope, had been brought back on the market. It is used with the standard Zeiss microscopes. The instruments can be moved in any direction by means of screws. The motion is accomplished over greased, sliding planes.

The developments of lighting techniques by Zeiss have been used for medical purposes. The Pantaphos, a spherical lamp, is used for shadow-free lighting of areas extending from 25 to 40 cm in surgical operations. A new dentist's lamp, using a 6-v 15-w lamp for lighting areas 6 to 14 cm in diameter from a distance of 0.5-1 m, with a maximum light intensity of 2,000 lux, has also been developed Both of these lamps, due to their highly efficient utilization of a relatively weak source of light and the low degree of heating resulting therefrom, should be suitable for lighting small objects in photographic work.

Zeiss has also brought out a number of miscellaneous optical articles. One of them is a complete ophthalmologist's kit. Another item is the new flame photometer for determination of calcium, potassium, and sodium equipped with rapid-change color screens, and capable of detecting 1 mg of the above elements per liter of solution.

The polarimeter for the investigation of optically active substances is connected with an adjustable lamp which greatly facilitates operation of the device.

The new colposcope also has a more practical design, and it can be operated with one hand. At a distance of 200 mm from the object, it affords 12 x magnification and a 20-mm field of vision with a 20-mm diameter.

Other new devices are a projection optimeter with an indication accuracy of 0.001 mm, a small shop microscope, and a large shop microscope with projector, and internal and external gauges.

Zeiss is again building mirrors for use in astronomy. These mirrors are free of chromatic errors of this type should be suitable for photography and microscopy.

The photographic lenses have been further improved. The Tessar lens has been brought up to date to meet present-day requirements, while new lenses have been put on the market. The new 35-mm Flektogon lens, f2.8, represents a wide-angle lens

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for use in miniature reflex cameras, while the Topogon lens is a special 25-mm wide-angle lens for use in the Contax IIa camera. Another new lens for use in miniature photography is the Biometar, with high resolving power and high freedom from distortion. The f2.8 Biometar is used in the Zeiss Dokumator microfilm camera. When used with the Contax camera, it should be a valuable instrument for color photography. New telephoto lenses will be available soon. The new Roentgenbiotar lens, f1, 120 mm, which is excellent for images up to 6 x 6 cm format, used for photographing X-ray screen and cathode-ray screen images.

The Contax IIa camera has been equipped with new accessories. It can now be fitted with a universal range finder for focal lengths of 25, 35, 50, 85, and 135 mm, which allow the focal length and the range for parallax compensation to be read. The range finder is equipped with a correction device for people with defective eyesight. The double range finder for 85- and 135-mm focal lengths is also equipped with this adjustment and with parallax compensation. In these respects, it resembles the stereoscopic range finder made for the 65-mm long adapter. The Contax IIa can also be equipped with a new close-range focusing device, an improved version of the Contameter, for fixed distances of 50, 30, and 20 cm. It also has parallax compensation.

A new stereophotography adapter has also been released. Its prism, 12-mm long, is fitted for the Tessar f3.5, 5-cm lens, and will be specially suitable for close-range photography. The appearance of the device resembles the Contax prism adapter. It can be fitted to any camera, thus allowing the use of miniature reflex cameras for sterecphotography.

Zeiss is now coating all lenses with a patented chemical for protection from reflection and for elimination of secondary images and for increasing the permeability of the lens. The coating is known by the trade name of T-Schutz.

In addition to the portable 35-mm sound film projector, there has been developed a similar apparatus for 16-mm film. It comes in three versions, one for silent film, one for sound film with an 8-w amplifier, and one for sound film with a 20-w amplifier for use in lecture halls, etc. All sets can be used with 375- or 750-w lamps. The sound film apparatus is equipped with a device for varying the frequency so that it can also be used for silent films, allowing projection of 16, 18, 20, and 24 frames per second. The condenser has five lenses, with an aspheric surface. The Kipronar f1.4, 50-mm lens is used. The amplifier is housed in the sound film unit, the final stage is housed in the loudspeaker. A standard radio can be used instead of the final stage, making the appratus very desirable for home use.

The new Zeiss Erkona camera is a continuation of the well-known Zeiss Ikonta series. It is a folding camera for No 120 film, with a Novar f4.5 anastigmat lens, Compur shutter, eye-level view finder, and body shutter release for use as a snapshot camera. It should become a popular amateur camera, since it is a simple reliable set which can also be used for color photography.

A number of devices for commercial motion-picture projection have returned to the market. Among them are equipment for the operator's booth, and the well-known Ernemann VIIb projector which is being manufactured again at prewar quality and for which a large number of export orders have been received. An innovation over the prewar type has been introduced with the possibility of equipping the set with different lamps, depending on the size of the movie theater. The Magnasol II carbon arc lamp, for 75 w, is used in large theaters, while the Ikosol reflector lamp with honeycomb condenser is used in smaller ones. A special form of the Ernemann VIIb projector has been produced. This projector does not differ in size from the standard model, but allows the film strip and the sound strip to be played on the same apparatus, thus obviating the necessity of moving the projector further away from the booth window as is the case with most other combination film-and-sound projectors, because of their larger size. The combination projector can be used with both types of above-mentioned lamps.

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The Dresden shop of Zeiss has developed a device for use in film studios, a background projector, which takes the place of the theater stage projectors previously used for this purpose. The projector is sound-proofed and synchronized with the camera. Photocells are provided for checking the lighting. The photocells can also be controlled from the projector or from the control panel, their readings being indicated at both points.

Zeiss is also offering the Dominar 205 amplifier for use in movie theaters. It has an output of 20 w, and a distortion factor of less than 5 percent. The degree of excitation is registered on a dial on the front panel, so that overcontrolling can be avoided. Volume is controlled by means of a capacitance-sensitive volume regulator in the hall. A basic volume can be set on the amplifier itself. The amplifier can be used for sound film, phonograph records, and broadcasts by means of a selector switch. Two potentiometers regulate the photocell voltage and compensate fluctuations in volume. The amplifier has two control knobs for adjusting the high and low frequencies to a steady value. It uses three EF 12, two EL 12/375, and one AZ 12 tube.

A new projector, intended for nonprofessional movie presentations, i.e., lectures, is the Zeiss Phonolux. One distinctive feature is the arrangement of the reels behind the projector housing instead of on top or below the lens. It is also combined with the amplifier for sound film in one housing, so that it can easily be stored in a portable case, ready for use. It is built for 16-mm film and can run 600 m of film without rewinding. It has a single control knob for easier operation, and its parts are sturdy and quickly exchangeable. The photocells are housed in the amplifier unit to prevent disturbances due to faulty photocell cables. The set can also be used for silent film, and a phonograph or a microphone can be plugged into the sound system. It can be used with 110-, 125-, 150-, 220-, and 240-v AC sets. DC sets are also available. The same projector for silent film is an AC-DC set. Three lenses are available: 50, 35, and 70 cm.

All photocells in the above sets are made by Zeiss. They are made with composite photo cathodes, and are supplied either with a red- or a blue-sensitive layer, or as vacuum cells. Zeiss also is manufacturing photocells filled with inert gas and special-purpose photocells, i.e., high-insulation cells for use in measuring.

The Zeiss Contax S reflex camera has been fitted with a large number of improvements. It is, basically, a prism telescope, except that a mirror has taken the place of the prism. The view finder is the photo lens, representing the telescope lens, while a multiple achromatic system is represented by the eyepiece. The reflex system eliminates the necessity of obtaining a great number of various accessories. With the proper lens setting, and a tubular adapter the camera can even be used for macrophotography. For microphotography, the opaque glass underneath the prism is replaced by a clear glass. The camera can be used easily with a microscope, with the view finder eyepiece being used for observation instead of the eyepeice of the microscope, eliminating the necessity of removing the camera from the microscope while adjusting the microscope. The accessories available for this camera are the Flektogon wide-angle lens, the Biotar f1.5, 7.5 cm portrait lens, telephoto lenses, and a stereo adapter. The camera is equipped with excellent facilities for flash photography. It is the best precision miniature camera available.

The Zeiss Tenax pocket camera has been brought back on the market. It is the smallest Zeiss amateur camera produced for 24 x 24 mm. It has a Novar f3.5, 35-mm lens with a special shutter. It is an excellent snapshot camera, but will also prove suitable for more serious-minded amateur photographers.

The Zeiss slow-motion movie camera known from prewar days, is also back in production.

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The Ihagee firm has brought out a number of new items. A modified version of the Exakta II camera, called the Exakta Varex, incorporates some new features. It has an attachment for surge discharge lamps, in addition to the standard flash-bulb attachment. While the old Exakta used a Zeiss prismatic view finder which was placed on top of the reflector shaft, the prism has now been made part of the camera itself. For pictures where the new method might necessitate assuming awkward positions, the prism and eyepiece can be removed and the old-type view finder inserted instead. For microphotography, the ground glass can be replaced by a clear glass with cross hairs for focusing. Opaque glass with a 10-mm-wide ring of clear glass in the center can also be used. All these accessories make the camera, with shutter speeds from 1/1,000 to 12 seconds, an all-purpose camera. It can even be used for double or multiple pictures.

The Ihagee Exa camera is a simplified version of the Exakta, with shutter speeds from 1/25 to 1,300 second. It uses a novel drum-type shutter. The camera resembles the Exakta Varex in most other respects, and can be fitted with the same accessories. It uses a Meyer Primoplan f2.9 lens. The cameras can be equipped with the following lenses:

Zeiss lenses

Biotar f2, 5.8 cm
Tessar f3.5, 5 cm
Biotar f1.5, 7.5 cm
Triotar f4, 13.5 cm
Sonnar f4, 30 cm
Telephoto lens f8, 50 cm

Meyer lenses

Primoplan f1.9, 5.8 cm
Trioplan f2.9, 5 cm
Helioplan f4.5, 4 cm
Trioplan f2.8, 10 cm
Tele-Megor f5.5, 15 cm
Tele-Megor f5.5, 18 cm

In addition, the new Zeiss lenses and the stereo adapter can also be used. The flash attachment has been modified and improved, and other accessories are being developed.

The Union of People-Owned Plants for Precision Mechanics, Optical, and Electrical Products (Vereinigung volkseigener Betriebe Feinmechanik, Optik, Elektrotechnik) of Saxnsen brought out a number of cameras which do not differ fundamentally from the models previously produced by the member firms, but which contain some notable improvements. The well-known Weltini miniature camera with a combined range and view finder has been equipped with a new range finder which withstands mechanical shock and makes the camera less sensitive to rough handling by inexperienced amateurs. In addition, the Welti, also a 24 x 36 mm camera, and the Weltax for 6 x 6 and 4.5 x 6 cm are built.

The Meisterkorelle, a 6 x 6 reflex camera known from prewar days, is being produced again. It has also been improved. The lens housings are built so that the interchangeable lenses will also fit the Primaflex which uses 6 x 6 plates instead of film. Both the Primaflex and the large-size studio camera Reflex-primar have been improved. A new box camera, the 6 x 6-cm Sica with a large view finder, has also been put out. It has an f7.7 lens and fixed focus. The well-known Reflecta, a reflex camera with two eyepieces, is also available.

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The same organization is also giving increased attention to the production of enlarging apparatus which will be adequate for the most modern needs and which can be used with the modern light sources available for this purpose.

Turaphot G.m.b.H. is producing, among other things, a highly sensitive enlarging paper called Tura-Brom and Tura-Portreat, a silver-chloride-bromide paper for printing portrait negatives. It is sensitive enough for use in enlargers. The plant is also producing highly sensitive oscillograph paper, and paper for taking electrocardiograms and for measuring pressure fluctuations in scientific experiments. Tura Document Paper is used for the reproduction of documents, and as enlarging paper for line negatives. The plant also produces 35-mm and No 120 film.

Otto Kirschten at Eisenberg is producing, as always, standard film and Leica film. The firm is now specializing in the production of panchromatic film. At present, it cannot produce photographic plates, but it is hoped that the panchromatic portrait photography film will again become available.

The Niedersedlitz Camera Works, producers of the Praktiflex camera, have developed this camera into a new set, known as the Praktika. It is equipped with a retarding mechanism allowing longer exposure time, and with exchangeable glass plates. It comes with a flashbulb attachment, and can also be fitted with a removable prism for fine focusing on top of the view finder. It carries a Zeiss Biotar lens and supplementary lenses are available.

Lumoprint and Boeger and Co are producing the well-known reproduction devices for printing plant drawings up to 150 x 150-cm size, and smaller sets. They also produce devices for reproducing documents, some for reproduction on film and others for reproduction in the original size. The two firms are also building a reader which is really a small projector and which can hold up to 60 m of film. A mirror in front of the lens projects the image onto a screen

The Altisse Works are building their cheap box camera, and the Altix miniature camera, the latter in two versions. The fundamental design of the two Altix cameras is the same, except for different size (24 x 24 mm and 24 x 36 mm). The camera, a simple cheap amateur set, can also be used as a special purpose camera, e.g., an adequate version of a stereoscopic camera is made by combining two Altix cameras, bottom to bottom, with a joint shutter release button. The lens system has been especially adapted for this purpose. Another version of this camera, equipped with a Steinheil Cassar lens and Compur shutter, is also available.

Aldo is making a reflex adapter for the Altix camera for macrophotography. In this case, the camera is equipped with a Ludwig f3.5, 10.5-cm lens. The camera can also be used in the Aldo or Mikrolux reproducing stand, thus making it suitable as a simple microfilm camera.

Aldo is manufacturing a number of microscope stands for microphotography. These models have all been improved over last year's. The lighting system has been improved and the table arrangement has been modified. The magnifying glass stands and the stand for surgical photography are also still on the market, the latter with improved lighting, better reflectors, and a more practical camera arrangement.

The firm of Mikrolux is specializing in the manufacture of special lighting devices, such as dentists' lamps. It is also building the lighting devices for the Aldo microphotography stands. These lamps have been improved in their lighting efficiency and in their design and mechanism.

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The Filmosto People-Owned Plant is producing its high-performance projector Jubilar and also a new model, called Filius which is a cheap modification of the former. It is not built for high-power lamps, but usually equipped with a 100-w lamp. It has a triple condenser, which can be removed in three individual parts, and an adjustable concave reflector built along the same principle. For use with a 150-w lamp a special heat filter has to be inserted. The ventilation is excellent. The set can be used both for film and for glass slides. The guides for glass slides are arranged so that the slides can be exchanged in a darkened room. It has a fixed Diaplan f3.5, 10-cm lens.

The same plant is also building the Autofoc enlarger, and an improved version of this model, with an enlargement factor of 15 instead of 2.5, or even higher. The set contains a built-in exposure timer.

The firm of Doehring G.m.b.H., Berlin, is producing a complete line of photographic lighting equipment, such as soft-lighting lamps, spotlights, etc. Two large cold-light spotlights of 0.5 to 2 kw and 5 kw, 2 x 1-kw floodlights, and 3 x 1-kw lamps for motion picture photography are produced. During the second quarter of 1950, a fully automatic high-power arc light with an output of 200 amp is scheduled for release. The firm is also building the Salux 04 spotlight stand, and the Salux 50 arc light for 200 amp DC. The Salux 50 has a 500-mm diameter lens, shockproof and soundproof mounting, and is easily taken apart. The set is mounted in a pivot frame and can be adjusted by a gear with a handwheel. A handwheel adjusts to the desired focal length for floodlighting or spotlighting. The carbon rods are easily exchangeable. An opaque glass plate and a lens system afford observation of the arc. Correction of the electrodes can be accomplished by a manually operated device after the automatic adjustment mechanism has been shut off. The light is especially suitable for color photography.

The Deutache Glimmlampen-Gesellschaft Pressler (neon lamp company), Leipzig, is producing sound film cells with a highly red- and infrared-sensitive homogenous layer. The layer is very thick and affords great longevity of the tube.

The firm is also producing Xenon flashbulbs similar to those developed by Sylvania Electric in the US.

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